DOCUMENT RESUME

ED 379 398 CE 065 816

TITLE	The Report of the Task Force on Distance Education.
INSTITUTION	Pennsylvania State Univ., University Park.
PUB DATE	Nov 92
NOTE	51p.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Distance Education; *Educational Change; Educational Development; Futures (of Society); Higher Education; Institutional Mission; Institutional Role; *Role of Education; *Technological Advancement; Universities
IDENTIFIERS	*Pennsylvania State University

ABSTRACT

This report discusses distance education at Penn State and in a national context as well as considers its potential use and application in the university's future. Distance education is a most important resource that must be brought forcefully into the mainstream of activity in higher education. Increased learning benefits to students are the primary and most compelling argument for advancing distance education. Penn State must view technology as a central component in its strategic future and seize the opportunity to become a leader in its development and use. Three sweeping and pervasive forces acting upon all institutions of higher learning relate directly to the role that distance education should or must play in the future: a changing student population, the technological revolution, and a changing economic picture. Unique and special circumstances at Penn State predispose the university toward an augmentation of its distance education activities: the historic tradition of distance education, its multicampus structure, and its research and service missions. The task force made six master recommendations relative to achieving success in an initiative toward the advancement of distance education. They address the following areas: national leadership, administration, commitment of resources, life-cycle funding, and incentives and rewards. (An appendix includes task force member names and addresses. Contains 45 references.) (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 379 398

THE REPORT OF THE TASK FORCE ON DISTANCE EDUCATION

November 1992

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
J H Ryan
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

CF 065 P16

BEST COPY AVAILABLE

"We must not only develop a broader, sharper vision of how teaching must change, we must use appropriately new resources and technologies; we must balance, appropriately, knowledge transmission and knowledge utilization. Most important, we must have the energy and the courage to respond to the urgencies and demands for change that our new vision clarifies, and our technologies make possible."

Joab Thomas, President
The Pennsylvania State University
April 1991

CONTENTS PAGE

Executive Summary 1
Summary Of Recommendations For Action 3
The Task Force And Its Charge 6
The Report Of The Task Force On Distance Education 8
What Is Distance Education? 9
Technology And Distance Education 13
National Forces In Higher Education 14
A Changing Student Population 14
Technology 16
A Changing Economic Picture 17
The Force Of History And Mission At Penn State 20
The Historic Tradition Of Distance Education At Penn State 20
The Multi-Campus Structure Of The University 21
Research 22
Service 23
Recommendations For Action 24
Recommendation I: National Leadership 24
A Strategic Goal 25
The American Center For The Study of Distance Education 26
Partnerships With Business, Industry, And Government 27
Recommendation II: Administration 28
A Charge To Our Academic Units 29
A Distance Education Unit 30
Recommendation III: An Evolving Infrastructure 31
A Special Task Force 32
Strategic Implementation 32
Life-Cycle Funding 32
Recommendation IV: A System Of Investment 32
A Pool Of Resources 34
An Investment In Our Academic Units 35
An Investment In Faculty 35
Recommendation V: Incentives and Rewards 36
The 'Rainbow Dividers' 37
A Mainstream Responsibility 38
Revenue Sharing 38
Awards 39
Recommendation VI: A Cultural Change 39
Demonstration Projects 41
Conference And Workshops 41
Informational Programs 41

References
Members

EXECUTIVE SUMMARY

The Task Force On Distance Education has focused much of its deliberation on the central question posed in its charge by Executive Vice President and Provost John Brighton - "What role should distance education play in the future of Penn State?" We placed this question in the context of the *Strategic Goals* set by the University in 1990, the *Guiding Principles of the University Future Committee* whose charge is to develop a comprehensive sense of that future, and the *Statement of the Council of Academic Deans on the Future of Penn State* which was delivered to the President on September 1, 1990. We also looked at the evolving national picture of higher education in America and at the more localized circumstances of our own university. From this and extensive research on the subject of distance education itself, we have developed an answer to that question that serves as the centerpiece of this report and an over-arching statement of our belief in the place of distance education in the University.

In our view, distance education will become a substantial part of the University's future regardless of this report or any actions that are taken as a result of it. We believe that the external forces of an evolving student population, the revolutionary advances in technology, and the changing economic picture for all of higher education will, eventually, bring an enhanced and expanded use of distance education methodologies into the central strategies of most major universities. We also find that there are unique and special circumstances at Penn State that predispose the University toward an augmentation of its distance education activities and that this, likely, will occur at sometime in the University's future.

The Task Force believes that, at this moment, there is a "window of opportunity" that is open to the University that will allow it to capitalize on existing strengths and assume a position of national leadership in distance education.

However, the Task Force believes that, at this moment, there is a "window of opportunity" that is open to the University that will allow it to capitalize on existing strengths and assume a position of national leadership in distance education. We believe that this could ensure the future viability of our distance education efforts, increase the quality and efficiency of many of our academic programs, bring national recognition and prestige to the University through accomplishments in this area, and serve as a source of both cost-savings and revenue generation. We also believe that if this "window of opportunity" closes before strong actions are taken, the leadership role will pass to another institution and Penn State will, likely, be cast in the role of a consumer of distance education rather than a major producer.

We believe that the University should take all necessary steps to advance and support the use of distance education across the full range of academic pursuits and endeavors and move rapidly and aggressively to develop programs of the highest academic quality within each of its constituent units.

The Task Force firmly believes that there is a very real possibility that national and international preeminence in distance education may prove to be a prerequisite to national and international preeminence in most other areas of academic enterprise. To that end, we advance the proposition that distance education must become a central priority in Penn State's strategies for the future. We believe that the University should take all necessary steps to advance and support the use of distance education across the full range of academic pursuits and endeavors and move rapidly and aggressively to develop programs of the highest academic quality within each of its constituent units. We see this as an act of strategic necessity that touches on the future success of all academic units and, consequently, should be carried forward by a clear charge from the central administration.

We have developed our report around a central goal that we believe encompasses both the importance of distance education in the University's future and Penn State's place in the future of distance education. That goal is:

To elevate The Pennsylvania State University to a position of national leadership in the advocacy, creation, and utilization of distance education as an important and beneficial force in the future of the institution and all institutions of higher learning.

The Recommendations that follow are focused on the achievement of this goal.

SUMMARY OF RECOMMENDATIONS FOR ACTION

The members of the Task Force on Distance Education believe that now is the time for the University to embark upon an aggressive and comprehensive initiative towards the advancement of distance education at Penn State.

Recommendation I: That all necessary steps be taken to elevate Penn State to a position of recognized national leadership in the field of distance education.

* We recommend that the University make leadership in distance education a primary goal in its strategic plans for the future.

* We recommend that The American Center For The Study Of Distance Education at Penn State be enhanced and expanded to become the national locus for the study and understanding of distance education; the shaping of national policy for the method; the development of new program designs; assessment techniques and criteria; technological applications; and a principal force for the advocacy, development, and use of distance education throughout higher education.

* We recommend that partnerships with business, industry, and government be forged to support Penn State's efforts in advancing the cause of distance education and to bring the University to a position of national and international preeminence.

Recommendation II: That the University create an administrative and organizational structure that encourages and facilitates the use and development of distance education in all areas of academic pursuit and endeavor.

*We recommend that all schools, colleges, academic units, as well as student support and resource units throughout the University be charged by the central administration to explore, encourage, and support the development and use of distance education and include distance education within their strategic plans in the future.

* We recommend that a unit be created under the direction of the Vice President for Continuing Education specifically charged and organized to support the development and delivery of distance education.

Recommendation III: That the University commit all resources necessary to fully develop and maintain an evolving technological infrastructure to allow distance education to become a viable, efficient, and effective component in Penn State's future.

* We recommend that a special task force or committee be appointed by the central administration from those agencies or units within the University who possess knowledge or expertise over any aspect of the technological or practical infrastructure needed to serve an enhanced or expanded use of distance education and charged to deliver a strategic plan for the development of that infrastructure at the earliest possible date.

* We recommend that the University take whatever steps are necessary to implement the strategic plan for that infrastructure.

* We recommend that the University adopt as part of that implementation a strategy of providing adequate life-cycle funding for the technological infrastructure to assure that service levels are both maintained and responsive to ongoing technological developments.

Recommendation IV: That a system of investment in the future of distance education be established to provide support for program development and the continued growth of the method through its successful application.

* We recommend that a substantial pool of resources be assigned to the proposed Distance Education Unit to fund program development and that a proportion of revenues generated by distance education programs or cost-saving benefits derived from their use be returned to the pool to support further and enhanced program development.

* We recommend that a proportion of revenues generated by specific distance education programs or cost-saving benefits derived from their use be returned to the schools, colleges, departments, or other academic units that participated in the support or development of those programs.

* We recommend that a portion of the revenues generated by specific distance education programs be returned to the faculty who participated in the creation, teaching, development, or design of those programs in proportion to the extent of their contribution or participation.

Leadership in distance education is more than an opportunity for Penn State - it is a responsibility that grows from our long history as an innovator and leader in higher education.

In order for distance education to prosper and thrive at Penn State there will need to be a fundamental change in the culture of the University and an alteration in its basic attitudes towards the nature of learning and how it is best accomplished.

Recommendation V: That the University establish a clear system of incentives and rewards to encourage activity, recognize achievement, and foster continuing accomplishment in distance education at Penn State.

* We recommend that the promotion and tenure "rainbow dividers" be rewritten to specifically recognize distance education activities as being appropriate and co-equal with other recognized activities in the categories of *Teaching Ability And Effectiveness, Research And Creative Accomplishment*, and *Scholarship And Mastery Of Subject Matter*.

* We recommend that distance education activities be mainstreamed into the faculty's list of responsibilities so that a faculty member teaching, conducting research, or creatively involved in distance education sees it as part of his or her workload and not as an extra or adjunct responsibility.

* We recommend that the funding mechanism proposed earlier be used to provide financial incentives to schools, colleges, departments, and faculty to participate in distance education and return benefits whenever distance education programs generate revenues or return cost-saving benefits for the University.

* We recommend that the University create annual awards to recognize achievement in distance education and provide support for continued accomplishment.

If the University is to continue to hold national and international preeminence in higher education, it must be a leader and build its greatness upon its willing commitment to lead education into the future.

Recommendation VI: That all necessary steps be taken to create an environment favorable to distance education that will promote its use and development while serving to change the culture of higher education at Penn State.

* We recommend that the initial thrust of the proposed Distance Education Unit be to develop demonstration projects throughout all units of the university system to clearly establish the potential use, benefit, and application of distance education within these units in service to their broad academic goals.

* We recommend that the University and the American Center For The Study Of Distance Education sponsor and promote conferences, workshops, speakers programs, and other events to inform and educate the university community about distance education.

* We recommend that the proposed Distance Education Unit identify and develop individualized programs within each major academic unit to inform and educate their faculty about distance education and bring them to a better understanding of the worth, merit, and potential benefits of the method for their particular area.

THE TASK FORCE AND ITS CHARGE

The Task Force on Distance Education was appointed on March 31, 1992 by the Vice President for Continuing Education, Dr. James Ryan, and charged by the Executive Vice President and Provost of the University, Dr. John Brighton. The charge delivered to the Task Force was to explore and examine distance education both at Penn State and in a national context, consider its potential use and application in the broad scheme of the University's future, and bring forth recommendations to address the role that distance education should play in that future.

The group, consisting of twenty-three faculty and administrators and three professional staff, was asked to consider distance education as "a serious issue and one that is very important to the University's future" and approach it with a view "to build a vision of distance education in Penn State's future." The committee was to assess the University's capacity to deliver instruction at a distance and determine what that capacity should be if distance education were brought to a level of use that, in the committee's view, was appropriate to the needs of the University. The Task Force was also asked to consider how the University should "position itself to deliver instruction at a distance between campuses and to national and international audiences."

The Task Force was given until the first of June to deliver a preliminary report with a final report due by the end of October. Although the task has been difficult and, at times, overwhelming, the Task Force has completed its work and offers this report in the hope that it will prove to be timely, accurate, and, above all, helpful.

Over the seven months of our investigation and deliberation, we have found that as our understanding of distance education grew and developed, our sense of its strategic importance to the University and its future deepened and became more pronounced. Many of us came to this assignment with only a peripheral knowledge of what distance education was, how it worked, what benefits it held for higher education, and how it could be applied to the University's strategies for the future. We also brought to the process a myriad of misconceptions and false assumptions about the methodology that were and are wide-spread throughout the University. However, as we became better informed and more knowledgeable through our research, discussion, and, most important, direct contact with functioning programs, we found that our opinions, beliefs, and ideas about distance education altered dramatically. We now believe that this method is a viable and important means

... to build a vision of distance education in Penn State's future.

of educating that should and, perhaps, must play a central role in the University's future strategies.

We also recognize, as a result of our own process, that advancing the case for distance education will be neither simple nor easy. However, we find the potential benefits that distance education offers to higher education are such that all efforts should be made to bring it into the mainstream of recognized educational activity. Consequently, we have responded to our charge with this report in anticipation that it will begin a strategic initiative towards the development and use of distance education across the University. In publishing this report we are less interested in gaining acceptance of our specific proposals than in bringing this issue to the attention of the university community and providing a first-step in what we believe will be a necessary change in the basic culture of the University.

...advancing the case for distance education will be neither simple nor easy. However, we find the potential benefits that distance education offers to higher education are such that all efforts should be made to bring it into the mainstream of recognized educational activity.

Because of this, we propose that this report be implemented in three distinct phases. In the first phase, we recommend that this report be disseminated and discussed. We also believe that before strong actions are taken, there should be a period of time spent in taking inventories of existing resources, developing an accurate picture of costs, and carrying forward a broad program of education and information to help the university community understand the pedagogy of distance education and the benefits that it can bring to higher education. In the second phase, a comprehensive strategic plan for distance education should be developed by the central administration in concert with the constituent academic units of the University. In phase three, the strategic plan would be put into action.

THE REPORT OF THE TASK FORCE ON DISTANCE EDUCATION

It is the contention of the Task Force that success in the University's over-arching goal of national and international preeminence in education, research, and service will be conditioned by and, potentially, dependent upon the success of its efforts in distance education.

This report calls for an enhanced and expanded use of distance education to serve the broad strategic goals set forth by the University in January of 1990. It also calls for the adoption of a new paradigm that places distance education within the core of the University's strategic priorities and provides for the encouragement, development, and utilization of distance education as a key component in all of our future planning. In the following pages, we argue that Penn State must solidify its position of national leadership in distance education and commit the necessary energy and resources to insure success in the growth and development of distance education programs. It is the contention of this task force that success in the University's over-arching goal of national and international preeminence in education, research, and service will be conditioned by and, potentially, dependent upon the success of its efforts in distance education.

This report will focus on the forces and factors that we believe advance the case for an institutional commitment to distance education. It identifies goals toward which such a commitment can aim and offers recommendations to achieve those goals. In form, this report is divided into two sections. The first deals with the nature of distance education and those forces that the Task Force believes warrant an enhanced utilization of the method. The second focuses on specific recommendations for action to advance a strategic initiative towards the expanded use of distance education.

It is the hope of the Task Force that this report will provide a foundation upon which a strategic initiative for distance education can be built. However, it is not our intent to present a final or definitive agenda for the development of distance education. Rather, the Task Force hopes that this report will serve as a starting point from which a fundamental redirection in our approach to higher education can take shape. To that end, we respectfully offer the following report.

WHAT IS DISTANCE EDUCATION?

"The goal of distance education is to transcend the barriers of time and space between the teacher and the learner. In the past, success in correspondence study, telecommunications, and other programs proved the worth of distance education. But today, with the explosion of technological resources and the expansion of our expertise in creating programs, distance education is becoming one of the most promising growth areas in higher education. In the future, it will certainly become even more important."

--Watkins & Wright
Looking To The Future

Distance education, like any formal method of educating, is a means by which someone who desires to learn engages in some form of communication with someone who can educate. In distance education as in other educational programs, the learner must acquire knowledge, develop skills in using that knowledge, and gain understanding of the value and application of that knowledge in the broadest possible context. However, distance education differs from most other forms of education in that the learner and the teacher are geographically remote from one another rather than in the same room in a face-to-face situation.

Although distance education may be defined in a number of ways, this task force has viewed "distance education" as a very specific term that applies only to situations involving geographical separation, a teacher, a learner or learners, interactive communication, and the acquisition of knowledge, skills, and understanding. In this sense, distance education is not just teaching people who are at distance from the instructor nor learning from someone who is not physically present. Although both distance teaching and distance learning do take place, there is also the demand that some form of interaction exists between the teacher and learner. For this reason, educational tools like 'programmed learning texts' and 'teach yourself books' are excluded from this and most accepted definitions of distance education. Similarly, instructional television broadcasts, audio and video taped lessons, and computer learning programs, on their own, would not be considered as forms of distance education. However, any or all of these may be part of a distance learning system if they are joined to some form of two-way communication that allows for interaction between the teacher and the learner. Two-way communication may be established using a wide variety of media including computer communications, telephone, and postal service. Emerging technologies like interactive multi-media and fiber-optic networks are already expanding the interactive capabilities of distance education and promise to yield even greater capacity in the future.

Although distance education is similar to other forms of education, the distance education learning environment is substantially different from that of the traditional classroom and employs very different techniques and skills in the design and execution of learning programs. It is not a mere extension of face-to-face education via technologies like video or computer. One of the great misconceptions of distance education is that success and accomplishment in

face-to-face teaching can simply be spread and proliferated through video broadcast or tape distribution and qualify as a workable model for distance education. To the contrary, the use of technology to increase class size or span distance without the appropriate didactic design considerations necessary for distance education usually produces diminished learning outcomes no matter how successful the source material may have been in the face-to-face classroom environment.

However, the preponderance of research indicates that well-designed and well-managed distance education programs produce learning outcomes equal to those of face-to-face instruction. A second misconception of distance education is that it is inherently inferior to face-to-face instruction or, correspondingly, that face-to-face instruction is inherently better or more successful in producing quality learning than is distance education. Again, to the contrary, research indicates that well-designed distance education programs produce learning outcomes that are equitable with the face-to-face model.

"Almost without exception, studies have shown that students taking courses via distance education technologies achieve as well as students taking courses via traditional methods."

-- J.R. Kendall & M. Oaks

Of greater significance is the fact that, in specific applications, the learning outcomes of distance education may be markedly superior to those of the traditional classroom environment when they provide added learning benefits that cannot be obtained through traditional means. The most obvious benefit of distance education is that it can provide access and opportunity for learners who cannot obtain education due to geographic or physical isolation or other factors that preclude traditional classroom instruction. This has served as the primary reason for advancing distance education in the past. However, the evolving nature of distance education now offers a much richer program of benefits than in the past and in those benefits lie the great promise of distance education as a tool for enhanced quality, increased efficiency, and greater effectiveness in the broad picture of higher education.

The most advanced distance education programs can provide students with far greater involvement in the process of learning and allow them the exercise of far greater control over that process than is possible in many traditional learning environments. Through distance education, students can shape and design the learning environment to suit their own particular circumstances and self-direct instruction to serve their individual needs and abilities. Distance learning programs can allow students to set the pace of their learning and, consequently, improve their comprehension and skill. Students who require greater time to master material can afford themselves the opportunity to review and absorb

"As they exist today, classrooms are generally ill-equipped to keep pace with the rate of change and skill-obsolescence projected for tomorrow. To center our strategies on the continued preeminence of the classroom in higher education is simply to ignore the facts of change."

-- A. G. Chute

Distance Education Futures: Information Needs And Technology Options

"The combination of computers, networks, and telecommunications provides powerful new approaches to distance education not matched by other methods"

-- Larry McKinney

Solutions For The 90's

information without the burden of "keeping up" with a class norm that determines the speed at which one must learn. In self-contained distance education programs, the constraints of time and place can be totally eliminated and learning can proceed whenever and wherever the student chooses. External limitations such as available classroom space and scheduling opportunities can be eased or eliminated from both the student's and the institution's overall program of educational offering. Substantial teacher/student interaction, for many years a perceived weakness of distance education programs, is rapidly becoming an asset of the method while it grows as a liability in many of our traditional classrooms. Interactive computer-based programs can provide students with a far greater interaction than is possible in many of our over-crowded classrooms and, even in the most simplistic of distance education program designs, interaction is potentially greater than in an evolving classroom situation that increasingly depends on too-large enrollments and over-taxed instructors.

The emerging technologies of distance education also provide extraordinary opportunity to enhance learning benefits through increased efficiency in the delivery of quality instruction to the broadest possible audience of learners. Quality teachers, our greatest educational asset, are in far too short a supply to meet the demands of ever-increasing enrollments and their effectiveness is all too frequently lost in a learning environment that is not conducive to quality instruction. The technologies of distance education can be applied to increase the reach of the our best instruction and create a new learning environment richer in support of instruction and of far greater capacity to expand learning opportunities than the present configuration of classroom lecture and outside readings could ever hope to be. Instructional materials that cover the breadth and depth of a particular subject can readily be made available in a single program allowing students to self-direct their learning to individualized levels of experience. Motion, sound, image, and the interplay of a wide variety of media can combine with traditional text to make learning a more interesting and challenging proposition for the student. In short, distance education can be far more than an alternative path for learning. It can become a new learning environment that offers increased benefits to students with vast potential for increased application across the total landscape of higher education.

"There is general agreement among researchers that people retain about 20 percent of what they hear, 40 percent of what they see and hear, and 75 percent of what they see, hear, and do. Interactive multimedia is the tool most appropriate to arriving at that 75 percent retention in formal education."
-- Geoffrey R. Amthor
Multimedia In Education: An Introduction

Still, despite all of the potential that resides in *distance education, it must not be misconstrued as either a* challenge to traditional learning or an entity unto itself. It is a *means* of educating with certain benefits to both learners and the institutions that employ it. Its relative strengths and weaknesses lie not in the method itself but in its application. Its relative success or failure is not determined by its inherent qualities but by how it is employed in a specific situation. Like any form of education, high quality distance education programs produce high quality learning while programs of poor design and execution produce diminished results. It is a form that demands that the design, production, and distribution of programs be specifically geared to distance education learning objectives and take into account all of the special needs and requirements of individual programs. It also demands management systems and assessment tools that are carefully designed to serve the realities of study outside of the face-to-face model.

This task force believes that distance education is a most important resource that must be brought forcefully into the mainstream of activity in higher education. We believe that it is a viable and proven method of educating that compares favorably with traditional instruction and, in important applications, can actually be a superior mode. We see its benefits to both learners and the institution of learning to be substantial and believe that they will certainly increase as expertise is gained in its use and application. We see increased learning benefits to students as the primary and most compelling argument for advancing distance education. Although we also see great potential for cost-efficiency and increased effectiveness in delivery by employing this method, it is the potential to improve the quality of learning and instruction that has led the Task Force to its strong position of advocacy and support for distance education.

However, the Task Force does not see distance education as a universal panacea for all of the problems in higher education nor do we see it as a force that will or should replace traditional instruction. We believe that distance education must become a component, albeit a most important component, that needs to be added to the complex matrix of means that must be employed if we are to meet the demands of the future. Distance education is a tool, a most valuable tool, and one that needs to used to far greater effect and profit than it has in the past.

TECHNOLOGY AND DISTANCE EDUCATION

We are laying the foundations for an international information highway system. In telecommunications we are moving to a single worldwide information network, just as economically we are becoming one global marketplace. We are moving toward the capability to communicate with anyone, anywhere, by any form - voice, data, text, or image - at the speed of light."
-- Naisbitt & Aburdene
Megatrends 2000

One of the most obvious and important facts of distance education is that it is dependent upon technology to exist as a means to educate. Since education takes place at a distance, some medium of communication must be employed to bridge that distance. However, the media employed in distance education are extremely varied and not necessarily complex or sophisticated. Learning can take place via any medium and the choice is determined by its appropriateness to the material, the cost of delivery, the availability of facilities, and the number of students who will take the course. In many applications, postal, electronic, or voice mail provide a reasonable means for communication to take place and no measurable enhancement of learning is gained by utilizing more sophisticated or expensive media. Despite the emphasis that is being placed on emerging electronic technologies, the method is not confined to expensive programming and delivery systems nor is it accurately represented by them. However, the emerging advocacy for distance education both nationally and internationally is due, in large measure, to the increased potential in the method that is being created by technology and the enhanced capacity for efficient and wide-spread use of distance education through advanced electronic delivery systems.

The technologies of communication, which lie at the core of distance education, are advancing at a rate unimagined in even the recent past. Although distance education is but one small part of the technological revolution that is reshaping human communication, it is a central focus of that revolution and does offer enormous potential and opportunity for higher education. Of particular benefit to higher education is the enormous potential that exists in multi-media, interactive programming, and digital-based delivery systems that are rapidly becoming available for wide-spread use and application. Multi-media capabilities in instruction significantly enhance and expand learning opportunities for students. Integrated sound, motion, image, and text create a rich new learning environment awash with possibility and a clear potential to increase student involvement in the learning process. The interactive capabilities of both program and delivery systems allow for feedback, dialogue, and on-going assessment that are impossible in all but the most localized and direct applications of resident instruction. Emerging delivery systems offer the potential to extend the reach of education beyond all constraints of time and place and carry it into the work place, the learning center, and even the home within

"Two coming developments will take the information revolution to a new realm. Fiber-optic cable will bring hundreds, even thousands, of channels into the home. And interactive computer technologies will give formerly passive viewers almost total control over what they see, when they see it, and what they do with it."

-- Richard Zoglin
Beyond Your Wildest Dreams

the space of a decade. In short, the quality, management, access, availability, and efficiency of education can advance significantly through the use and application of technologies, particular those of distance education, in service to learning.

This task force finds that technology is opening-up a new frontier in higher education that offers significant promise to improve learning and make it available to an almost limitless audience of learners. Our sense is that technology will alter and reshape the entire landscape of higher education and that it is important to recognize and acknowledge this change and prepare for it as a coming fact of our strategic future. We believe that the technologies of distance education present the University with a valuable resource that can be tapped and utilized to address many of the problems that are now before us. Our contention is that those universities that embrace these realities will gain a significant strategic advantage over their competitors and lay a foundation for future growth and stability. On the other hand, those that do not will be significantly disadvantaged and will carry additional burdens as they attempt to cope with those forces that are already acting upon higher education. The Task Force believes that Penn State must view technology as a central component in its strategic future and seize the opportunity to become a leader rather than a follower in its development and use.

NATIONAL FORCES IN HIGHER EDUCATION

"The typical American college student is no longer what he or she once was. We are seeing the first wave of a change in our student body unparalleled in the history of higher education."

-- A. G. Chute
Distance Education Futures: Information Needs And Technology Options

The Task Force believes that there are three sweeping and pervasive forces acting upon all institutions of higher learning that are of consequence in our strategic view of the future and relate directly to the role that distance education should or, perhaps, must play in that future. Each is distinct but all are interrelated and combine to create a force for change that we believe must be acknowledged and considered in all of our strategic plans. The Task Force is convinced that these forces will reshape and redefine the very nature of higher education and that this change is already taking place. Our sense is that the future is upon us and that we must respond to it aggressively and forcefully or risk being left behind or carried along no longer in control of our destiny.

A Changing Student Population

There is clear and ample evidence to suggest that the future population of learners will be dramatically different from our past and present clienteles and that these students

"Even today, only 20% of the nation's undergraduates are young people between 18 and 25 who are pursuing a parent-financed education.

Forty percent of all students are part-timers and this proportion will increase dramatically as we enter the next century.

Only about 20% of the nation's 14 million college students annually receive one or more certificates of graduation, from A.A. (Associate of Arts) to Ph. D. Non-degree learning is clearly a trend for the future.

Tuitions are rising much faster than the inflation rate. One year at an elite private institution today costs $23,000; by the year 2000, the price could be as high as $40,000."

-- John Elson
The Campus Of The Future

will have needs and carry expectations distinct and dissimilar from those for whom our present strategies were developed.

All data currently available presents an evolving student body that will become older, increasingly involved in part-time rather than full-time instruction, less able and disposed to study in the resident instruction mode, and more selective in exercising their educational options than any student population in the past. This growing body of learners will be increasingly concerned with life-long learning opportunities, specific programs geared to the needs of business and industry that lie outside of traditional undergraduate and graduate instruction, and the advancement of international perspectives in education that address the needs of a global market and increasingly interdependent world order.

Obviously, this will predicate a dramatic shift in the content of higher education and the need to see content as a dynamic and evolving reality that must constantly readjust to changing needs and perspectives. While higher education has always responded and redefined itself to serve the needs of society, the process of change will escalate in the future and demand a new outlook that allows for a more rapid "turn around" in thinking so that new ideas and concepts can be brought before students as quickly as possible. Our management of knowledge and ability to absorb new scholarship must also become more "streamlined" and responsive if we are to keep pace with both the increase of knowledge and the demand for it.

However, the great adjustment that must be made will be in the context of learning and the delivery of education to students. Life-long learning will demand a completely new sense of the university and its role in society and a consequent shift in its view of the context of learning. In the future, the University must provide far greater access and availability of learning opportunities for a population that will be forced to continually balance educational needs with unshakable commitments to home, family, and the work place. This context must also allow for self-paced learning unfettered by the traditional constraints of time and place. Education will become an on-going part of life and the necessity for increased flexibility, expanded delivery, and the ability to respond to and meet the individual needs of learners must match the demands of life-long learning. In short, the community of learners in the future will demand a new educational context, the development of new systems of delivery, and the creation of new and expanded areas of scholarship to meet their needs in a rapidly changing and increasingly interdependent world.

In the view of the Task Force, distance education is an essential and appropriate means to meet many of the needs of this changing student population and an opportunity to extend the role of higher education into new and diverse communities of learners for whom education will be a necessity rather than an option in their futures. We believe that this change is well underway but our adjustment to it has barely begun. Our sense is that this force will soon mandate a national commitment to distance education and that higher education must now begin to readjust and realign itself to address this eventuality.

Technology

The technological revolution brought on by the use of electronic media and information systems has entered a new and dynamic phase that is now beginning to alter our social, political, economic, and cultural landscape in ways that are not only unprecedented but are occurring so quickly that we are "swept away on the winds of change" and are finding, almost daily, that our world has changed to such an extent that it is barely recognizable. The computer has altered the very nature of how we think, do business, entertain ourselves, and interact with one another. Video has created a world of images that shape our opinions, beliefs, commerce, and even our political process. Advances in audio technology have, in less than a decade, made the phonograph an object of historic curiosity and changed the culture of listening to an individual "plugged in" activity rather than a social or communal act. Communications networks have made the world much smaller and promise to create a true "global village" with a vast common market that exists outside of increasingly ineffective barriers like national boundaries and political influence.

"America's prominence in the world economy rests to a large extent upon its technological competitiveness. We are no longer so much of a nation rich in industry as a nation rich in information. Our future strength depends on how effectively we can use computer-based technologies."
-- Martinez & Mead
Computer Competence

And now, there is the coming reality that these once distinct media will converge to form a single medium encompassing all of the functions of communication. Music is already something that we watch as well as listen to. The book is being rapidly transformed into an electronic learning tool that utilizes sound, images, and motion in addition to a printed text. Our computers now speak to us, as do our automobiles and kitchen appliances, and, in the not too distant future, they will probably allow us to talk back to them. Our world, for good or ill, is being transformed into a multi-media environment and the realities of that transformation must be acknowledged and taken into account when making any attempt to project ourselves into the future.

"The telecomputer will revitalize public education by bringing the best teachers in the country to classrooms everywhere. More important, the telecomputer will encourage competition making education respond to global conceptions of quality, learning, and educational results."
-- George Gilder
Life After Television

Technology will demand a shift in our culture from "terminal" to "life-long" learning as a norm and a fundamental reorganization of our thinking, culture, and social institutions will be necessary to accommodate this change. The culture of higher education will not be immune to these changes. The preeminence of resident instruction will certainly have to alter if higher education is to keep pace with the demands that will be placed upon it. An acceptance of the use and fundamental need for technologically-based learning will also have to become a part of higher education's strategies for the future. And planning for the future must include preparation. The programs of tomorrow must begin today if we are to be ready to participate in the future when it arrives.

Although the future is not with us, it is approaching at an alarming speed and it is imperative that we prepare for it and not be taken by surprise. This task force believes that technology, in general, and distance education, in particular, will play a central role in the future of higher education and the role that the University plays in that future will, to a large extent, be determined by what is done now to accommodate technological advances. Technology will make education one of the primary "goods" in a world economy that will be characterized by change and redirection more than at any time in the past. The need for education will predictably escalate as our citizenry attempts to keep pace and informed in a world that will demand increasing expertise and experience in a world market. This task force believes that distance education will be the means by which such experience and expertise will be acquired. We see the need for a balance to be struck between the need for education and its acquisition. It is the contention of the Task Force that distance education will be the fulcrum upon which such balance will rest in the 21st Century.

Like government, higher education is caught between two conflicting forces - increased demands for services and diminished resources to meet those demands - with a public unwilling or unable to address that conflict in a meaningful or substantial way.

A Changing Economic Picture

If there is any force that is acting upon higher education, it is the broad reality of declining resources in the face of increased demands on all areas of academic endeavor. The decline of public support, the limitations of increased revenues from tuition, and the diminished potential for raising funds in a weak economic environment are national phenomena that effect all institutions of higher learning. Strategic stances like the University's "doing less and doing it better" have become the rule after decades of strategies based on incremental growth and expansion. The reality is, simply, that there is less and will probably be less in the foreseeable future.

However, the demands that are placed on great public

universities like Penn State show no signs of diminishing in any reasonable proportion to declining resources. Enrollments are growing in response to the increased costs of private education and the enhanced reputations that our major universities now enjoy. Research occupies an increased importance in a society and economy driven by the demands of a global market, increased competition, and sweeping advances in technology. Academic services to business, industry, and, most important, human needs have escalated and will continue to do so as our society increasingly turns to its centers of learning for guidance and solutions to the problems of a world growing more diverse, complex, and sophisticated with each passing day. In short, although financial constraints may necessitate a stance of "doing less," the demands being placed on higher education call for it to become increasingly involved, both quantitatively and qualitatively, in those activities mandated by university commitments to education, research, and service.

If there was a central paradigm in higher education, it was formed out of the relationship between our institutions of public learning and government in the cause of increased education for the broad population. That cause persists and is becoming more important as we approach the 21st Century. However, that central paradigm is collapsing as government retreats from its long-standing role of primary partner in advancing higher education to the general population. Although the deepening problems of higher education are clearly driven by the growing resource gap created by decreased government support and collateral increases in the cost of and demand for learning, the focus of the public debate on higher education has been centered, instead, on the institution of learning itself and those perceived failures of our public and private schools to manage their affairs effectively and efficiently. The public mood, whether right or wrong, is not supportive of increased government spending to bolster our colleges and universities and there is no emerging consensus to reverse that mood. Like government itself, higher education is caught between two conflicting forces - increased demands for services and diminished resources to meet those demands - with a public unwilling or unable to address that conflict in a meaningful or substantial way.

Higher education must construct a new paradigm to address its growing financial problems.

There is now a clear need for higher education to develop a new paradigm to address its growing financial problems. New partnerships must be formed to fill the ever-widening gap between revenues and expenditures. Rather than being based on the largess of a single powerful partner as in the past, the future of higher education will likely rest

on a broad and diverse collection of partners, including government, but, with growing reliance on the private sector for substantial amounts of support. Higher education must also adapt and become more business-like in its activities than in the past. Strategic market considerations, greater cost-efficiency, and enhanced effectiveness in educational programming must become a part of this new paradigm. Entrepreneurial thinking must also become a part of our strategic planning and investments must be made, despite their difficulty, to insure that the demands of the future can be met. Higher education must, simply, reconstruct and reconstitute itself as a financially stronger and more self-reliant institution if it is to maintain its necessary position in our society.

"Many of the problems we must now deal with are large problems that will require major group efforts and cooperative programs. These will extend beyond traditional groups within academic and non-academic departments, and will involve, increasingly, cooperative programs between divergent groups - interdepartmental, interschool, interuniversity, or international in scope."

Yet, great care must be exercised in this reconfiguration. Education cannot be seen as merely another commodity to be bought and sold in the marketplace. Learners must not become our "market" and the influence of rich and powerful clients must not pull higher education away from its devotion to intellectual excellence, the pursuit of knowledge, and service to the common good. Higher education is entering a most propitious yet delicate stage in its history and it must see this time as one of opportunity to forge a greater future and not fall prey to easy answers or seemingly simple solutions.

This task force believes that distance education can play a significant role in the complex new paradigm that must be created by higher education to insure its future success. We believe that it is an important means to increase the quality of education and research, utilize resources more efficiently, increase the effectiveness of scholarship and learning, and expand the ability to provide service. The Task Force recognizes that in order for distance education to play such a role, there will need to be a change in the basic perception of the method within the culture of higher education and a need for substantial investment. However, it is our belief that the potential is too great, the need too compelling, and the benefits too substantial not to take an aggressive stance towards the advancement of the method in higher education. It is our contention that distance education is a crucial and necessary component in any realistic plan for the future of higher education.

These three forces that the Task Force has identified create, in its opinion, a powerful case for the adoption of distance education as a central strategy in any comprehensive plan for the future of higher education. While only a part of what must be a sweeping and fundamental new strategy, distance education is clearly an important component. The

As a tool for change, distance education offers the first and best response to a wide variety of needs that must be addressed and presents higher education with the opportunity to emerge from a period of financial difficulty secure and, indeed, strengthened in the pursuit of its fundamental goals.

Task Force believes that, as a tool for change, distance education offers the first and best response to a wide variety of needs that must be addressed and presents higher education with the opportunity to emerge from a period of financial difficulty secure and, indeed, strengthened in the pursuit of its fundamental goals.

But beyond the forces of national change that strike at all of higher education, the Task Force feels that there are particular factors in the make-up and history of Penn State that intensify the case for distance education in the University and speak to an even greater commitment to the method than at most competing institutions.

THE FORCE OF HISTORY AND MISSION AT PENN STATE

The Task Force believes that beyond the call for the use of distance education as a strategic priority predicated by national forces, there are compelling reasons, unique and specific to the University, that speak to its adoption as a central component in our future planning. More important, the Task Force believes that there is a compelling case for Penn State to move aggressively and rapidly toward a position of national leadership in distance education. Our past; our basic structure; our dedication to excellence in teaching, research, and service; and the current status of our infrastructure combine to give us a competitive advantage that should be exploited and capitalized upon to the benefit of both the University and the emerging community of learners who will seek education in the future.

The Historic Tradition Of Distance Education At Penn State.

"For the application of media generally, Penn State is a leader, and increasing numbers of faculty recognize that credit is credit and a course is a course regardless of location."
-- N. P. Eurich
The Learning Industry

Distance education has a long and distinguished history at Penn State and the University is recognized as one of the national leaders in both the creation and delivery of quality learning at distance. This year, Continuing Education marks its 100th year of service to learners across the state and around the world. Independent Learning is the largest program of its kind in the nation with over 30,000 enrollments, drawing degree and non-degree students from all counties in Pennsylvania, from every state, and from 26 countries. The College of Agricultural Sciences is involved in a wide variety of distance education activities centered on Cooperative Extension and including teleconferencing, computer access to information, and the use of the AG*SAT network for satellite credit transmission. The College of

Engineering offers advanced degrees in Mechanical, Electrical, and Acoustical Engineering and there are master's degrees in both Adult and Health Education offered at distance. These are but a few of Penn State's accomplishments in the field of distance education.

This record of commitment and achievement has provided Penn State with national and international pre-eminence in distance education and created an infrastructure that gives the University a substantial platform of accomplishment, experience, and expertise to build upon for the future. The Task Force believes that Penn State in a unique and enviable position to capitalize on its current strengths and assume the leadership role in the advancement of this important national interest. While competitors are emerging in both the public and private sectors, few can boast the breadth or depth of experience that the University has in distance education or can easily build to the level of development in infrastructure that the University currently enjoys. Strategically, we believe that it would be in the clear interest of the University to exploit this advantage and solidify its position of leadership in the development, delivery, and utilization of distance education for the future.

The Multi-Campus Structure Of The University.

For many years, distance education technologies and programs have been successfully employed to serve the mission of "one University geographically dispersed" and build bridges across the spaces that tend to isolate and divide the 23 centers and campuses of Penn State. However, the future will certainly demand far greater interaction and interrelation between the constituent campus units than at any time in the past. The need to provide services broadly across the system will increase as the University seeks greater cost and management efficiency. The sharing of resources, the elimination of unnecessary duplication, the streamlining of administrative support, and the provision of new learning partnerships will be requisite parts of any strategic vision of Penn State's future. There is also the broad philosophic need to create a greater sense of shared identity and overcome the damaging effects of fragmentation at Penn State. If the University is to maintain its important and necessary position as the Commonwealth of Pennsylvania's premier institution of higher learning, it must strengthen the "ties that bind" it together and build upon its shared mission and vision of academic excellence.

The Task Force believes that distance education must be an important and central component of any strategy that is developed to address the needs of Penn State's multi-campus

"To plan adequately in a time of uncertainty and great expectations, governing boards with multi-campus responsibilities are necessarily challenged to manage and position their institutions in order to exploit change rather than fear it."

-- J. W. Gilley

Thinking About American Higher Education: The 1990's And Beyond

structure. Provisions must be made for increased sharing and interaction between and among units. Initiatives must be advanced to make each unit a 'shareholder' in the broader vision of the University's future. Specific efforts must be directed at identifying academic strengths within the CES and making them available to the University-wide community of learners. The Task Force believes that distance education provides the most viable and effective platform to advance many of the goals of a more unified and interrelated university.

Research.

As one of the great research universities in the nation, Penn State must be able to facilitate and advance its research mission in the most expeditious, cost-effective, and efficient way possible to maintain and enhance its position in an increasingly competitive environment. The need to access, utilize, synthesize, and disseminate information rapidly will be a central factor in the advancement of the University's research efforts. There is a demand to increase the speed at which information is moved. The technologies of the past are simply too slow to keep pace with the advances that are taking place in almost every aspect of investigation and study. Modern research is also becoming a true global activity that demands that researchers have access to one another and their expertise despite the distances created by time and geography. Overcoming 'distance' in research will be as important to its success in the future as facilities, funding, and space are in the present. There is also the very real and growing competition between research and educational interests for the limited resources that are available. In research, as in all other aspects of Penn State's future, strategies must be developed to allow for the advancement of the research mission without compromise to the other important goals of the University.

"Penn State is at the forefront of America's research universities and its research enterprise is among the fastest growing in the nation. We must do everything necessary to protect that status and to reach ever higher."
-- Joab Thomas
The Challenges Before Us

The Task Force believes that in a world increasingly dependent upon near instantaneous interaction and the global sharing of information, the technologies of distance education will be as important to the research mission of the University as they are to the educational. We also believe that distance education provides an important opportunity to advance both the educational and research missions of the University without increasing competition between them for resources. Since the technological infrastructure required for either can be utilized by both, there is an inherent benefit derived in viewing distance education as a cooperative venture that bridges traditionally divided interests. In research, as in education, distance education and its technologies are

essential to a future strategy that will allow for progress towards the goal of national and international preeminence.

"Our institutions of higher education will become increasingly involved in public and private service as we enter the next century. Many of the services that, in the past, were performed by government agencies will become the responsibility of our colleges and universities. This will have the effect of making the school, once again, an important and respected focus of our social and cultural life."

-- Cetron & Gayle
Educational Renaissance

Service.

As the Council of Academic Deans noted in its statement of September 1, 1990, it is important that the University "achieve recognition as the preeminent university in Pennsylvania and be viewed by the citizens and government of the Commonwealth as the state university and a critical resource for the well-being of Pennsylvania." Clearly, this will require an increased role in the provision of service to the state and its citizens. Since service on a state-wide basis is a matter of distance, the Task Force believes that distance education and its application to the service mission of the University will be of equal importance to the advancement of the methodology in education and research. As business, industry, government, and the populace of the Commonwealth turn to the University for guidance and solutions to the myriad of problems that they face, means must be found to both answer these calls for service and provide such service quickly, efficiently, and effectively.

The Task Force believes that distance education will be an important and necessary tool in advancing the service mission of the University. We see the multi-campus system of Penn State as a network that reaches out across the state to provide and disseminate service as well as traditional instruction. We believe that the linkage of this system through distance education technologies will provide the University with the most efficient and effective means of delivering and managing service both to specific constituencies and to the broad base of the general population. Our sense is that Penn State can utilize this system to become the most visible, responsive, and responsible service presence in the Commonwealth. As in research and education, this task force sees distance education as the means by which much of our future in service will rely and depend upon.

RECOMMENDATIONS FOR ACTION

In the following pages, the Task Force will make broad and specific recommendations to advance the use and development of distance education across the University. These recommendations are focused on overcoming what we see as the two primary obstacles to the success of a strategic initiative for distance education. The first is essentially mechanical and deals with the need for enhanced and expanded systems of management and infrastructure to support increased distance education activities within the University. The second is a more important and far more difficult obstacle to overcome. We sense in the University a broad reluctance to change, a deep suspicion of technology, and a not-too-subtle opposition to new movements like distance education that depart from the traditional means and methods of instruction. We feel that in order for distance education to prosper and thrive, there will need to be a fundamental change in the culture of the University and an alteration in its basic attitudes towards the nature of learning and how it is best accomplished. Yet, despite these difficulties, we believe that they must take place.

As outlined in the previous section of this report, the Task Force believes that there are compelling reasons both within and without the University to embark on an aggressive and comprehensive initiative towards the advancement of distance education at Penn State. The members of the Task Force On Distance Education agree that it is now time for the University to undertake such an initiative and advance the development and use of distance education as a central priority in its future planning. The following recommendations reflect the decisions of the Task Force relative to achieving success in such an undertaking. They are organized about six master recommendations that we believe are central to the success of a strategic initiative for distance education.

National Leadership

Recommendation I: That all necessary steps be taken to elevate Penn State to a position of recognized national leadership in the field of distance education

Distance education is a tool of enormous benefit and value for Penn State and all of higher education. However, its potential has only begun to be explored and its use and program capabilities are still in an early stage of development. Fiscal restraints, institutional conservatism, and the lack of strong national leadership continue to retard its growth despite its proven capacity for improved learning

and its extraordinary promise to provide increased efficiency and effectiveness to the system of higher education.

Penn State is in a unique and advantageous position to bring distance education to the forefront of its plans for the future, gain needed leverage in the precarious business of balancing resources to needs, and increase learning benefits for students. Perhaps of greater importance is the opportunity that exists for the University to assume the leadership role in distance education and show the way for all of higher education. At present, there are pockets of activity in the method spread throughout the country but no single driving force to set the agenda, forge policy, and give direction to the great challenge of creating the models that the future will be built upon.

The Task Force believes that leadership in distance education is also more than an opportunity for Penn State--it is a responsibility that grows from our long history as an innovator and leader in higher education. As one of the nation's great centers of learning, we must make the necessary commitment to excellence and move rapidly and forcefully to shape the course of the future. If the University is to continue to hold national and international preeminence in higher education, it must be a leader and build its greatness upon its willing commitment to lead education into the future.

A Strategic Goal

***We recommend that the University make leadership in Distance Education a primary goal of its strategic plans for the future.**

The central impediment to the growth of distance education in the United States is that it has developed outside of the mainstream of higher education's strategic approaches to learning and has no central advocate on the national level to bring it out of the fringes of activity and into that mainstream. In much of the rest of the world, distance education has been an accepted and exploited means of educating and, as a result, is more advanced and strategically more important in the global conception of educational practice and delivery. Great Britain, New Zealand, Australia, Canada, and much of the Third World have many years of proven accomplishment and success in utilizing distance education. However, in the United States, despite our acknowledged technological superiority and substantial experience and expertise in the method, distance education is, by-and-large, an ancillary activity to resident instruction driven primarily by the efforts of individual faculty or units that have developed programs as a matter of personal interest or initiative. Even at Penn State where distance education

has a long and successful history, the method remains relatively under-utilized given the University's resources, experience, and highly developed infrastructure.

The Task Force believes that the full value and importance of distance education will never be realized in the United States until it is brought forcefully into the mainstream of recognized academic activity by a powerful advocate. The Task Force believes that Penn State is in a unique position to become that advocate and champion distance education for both its own interests and those of the broader academic community. To do this, the University must take that necessary first-step of making leadership in distance education a priority in its strategic plans for the future.

The American Center For The Study Of Distance Education

***We recommend that the American Center for the Study of Distance Education at Penn State be enhanced and expanded to become the national locus for the study and understanding of Distance Education; for the shaping of national policy for the method; for the development of new program designs and technological applications; and as a principal force for the promotion, development, and use of distance education throughout higher education.**

Distance education is currently undergoing dynamic changes as its potential uses are expanding and its basic nature is being transformed by technology. There is a pressing need for research, policy, information, and, above all, understanding of the method and its place in American higher education. At present, most distance education activities are scattered, isolated, and remote from one another and need some central point where information and accomplishment can be shared and evaluated. Questions of policy concerning such important issues as "fair-use" and copyright, market infringement, and accreditation are being raised with increased frequency but have not yet found a recognized forum for their discussion and consideration. The need for new models of programs, assessment, management, and marketing specifically developed for distance education is already great but no one has, as yet, come forward to design and create them. In short, the escalating growth of distance education and its potential for greater use in higher education is demanding a national agent or agents to address the many issues, concerns, and requirements that surround the method and increase as it becomes more visible and known.

The Task Force believes that the American Center For The Study Of Distance Education at Penn State is in an advantageous position to spearhead a national response to the

many concerns and issues surrounding distance education that must be addressed and Penn State is perfectly positioned to serve as the host institution for the shaping of the future of distance education. The American Center For The Study Of Distance Education is a national and international resource located within the College of Education. The Center publishes *The American Journal Of Distance Education* which is widely recognized as the principal source of scholarly information and response to distance education in the United States. In addition, the Center publishes a monograph series and participates in the Distance Education On-line Symposium (DEOS), an electronic bulletin board network with over 1000 members in over fifty countries. The Center is the point of contact between American institutions and individuals involved in distance education and the world-wide audience through the International Council For Distance Education. By enhancing and expanding the activities of the Center, Penn State could provide the leadership and support the vision that distance education will need to grow and prosper as a national force in higher education. This task force believes that such leadership is necessary and that Penn State is, by virtue of its history and existing strength, a most logical choice to assume this important responsibility.

Partnerships With Business, Industry, And Government

***We recommend that partnerships with business, industry, and government be forged to support Penn State's efforts in advancing the cause of distance education and bring the University to a position of national and international preeminence.**

Distance education will not grow by the acts of any single agent or interest. It will, instead, require cooperation, sharing, and the interaction of a vast number of partners from both the public and the private sector. Business and industry will be important partners in any program of distance education. The technologies to create and deliver distance education will be developed in the private sector as will much of the necessary expertise and experience to produce programs of the highest quality. Government, as a financial partner, determiner of national and state policy, and overseer of the majority of our colleges and universities, will need to be heavily involved in any broad program of development and use. And, government will likely be one of the primary clients for many of the programs that will be developed through distance education.

This task force believes that the relative success or failure of distance education will depend upon the partnerships that are forged between government, business,

industry, and our educational institutions to bring this method forward rapidly and aggressively. We believe that in the interests of quality and excellence in education, the leadership role in this collective must come from higher education. The potential for profit in distance education is great and may easily create a market-driven model that fails to make quality of instruction and increased learning benefits for students the highest priority in the development of the method if higher education does not seize the leadership role.

Again, Penn State is uniquely qualified to forge the requisite partnerships for distance education and provide the necessary leadership, not only for the Commonwealth, but for the broad national interests of quality education and service. This task force believes that time is of the essence and that these partnerships must be developed now. To wait or hesitate is to invite others to assume the leadership role and open the very real possibility that distance education will not proceed at the direction of our educational institutions but, rather, be guided by the private sector, the market, and the desire for profit.

Administration

Recommendation II: That the University create an administrative and organizational structure that encourages and facilitates the use and development of distance education in all areas of academic pursuit and endeavor.

Distance education, unlike many other means of educating, requires the participation of several and sometimes many partners to create and deliver instruction to students. For most faculty interested in creating distance education courses or developing distance education versions of existing courses, the mechanical process of taking an idea and moving it forward to program status is, presently, time-consuming, confusing, cumbersome, and frustrating. Few faculty or administrators know where to begin and the process itself may require developing contacts with as many as six or seven separate support units with no central tie or connection. Obviously, many, if not most, potential projects are abandoned early in the process because of the difficulties that one faces in even attempting to initiate a proposal.

In order to truly build a movement toward distance education, our development process must be streamlined, our support services reorganized, and our schools and colleges brought into the process as active participants. Faculty need to know where to take program proposals and be encouraged to initiate them. Once proposals are made, they also need to

know that an agent or agents will carry them forward and give them fair hearing within a context that provides reasonable opportunity for development. Proposals that are advanced need to have an advocate who can assemble the necessary contacts for faculty, explore the feasibility of their proposals, and bring together the necessary expertise and support to actually develop them. And, of course, there must be incentives and rewards built into this process to encourage and promote faculty participation.

Of equal importance to the structures that are needed to facilitate development from proposal to program is the need to promote, encourage, facilitate, and guide program initiation and the early development of proposals within our schools and colleges. At present, there is very little help or encouragement for distance education projects on the local level. If a system-wide utilization of distance education is to become a reality, it must begin with individual faculty who are inspired by the support and assistance of their departments and colleges. "Commitment" is a crucial word in the furtherance of distance education goals and commitment must begin at the local level. However, if such a commitment to distance education is to become a reality, it must be fueled by support and direction from the central administration.

A Charge To Our Academic Units

***We recommend that all schools, colleges, and academic units within the University be charged by the central administration to explore, encourage, and support the development and use of distance education and include distance education within their strategic plans in the future.**

The members of the Task Force agree that if distance education is to have a qualitative and quantitative impact upon the University's future, it must become a broad-based method that is applied across the breadth of our educational, research, and service activities. This will require direction from the central administration who must serve as the principal advocate for distance education through the strategic planning process. If the central administration does not provide clear and forceful leadership in this regard, the Task Force fears that distance education will continue to be a marginalized activity isolated from the mainstream of academic endeavor. Consequently, a necessary prerequisite for the advancement of distance education at Penn State is a commitment to it as a recognized and desired component in the strategic planning process.

Since distance education must build from within our constituent schools and colleges, there is a need for

administrative support, encouragement, and guidance on the local level to serve the development and use of distance education programs. Rather than the creation of a new administrative layer, we see this being accomplished through an expansion of the duties of those administrators already charged with graduate and undergraduate teaching, research, and service. This charge should call for the recognition of distance education as an important factor in the administrative actions of our schools and colleges and should specifically include the use and development of distance education as an administrative priority.

A Distance Education Unit

*** We recommend that a unit be created under the direction of the Vice President for Continuing Education specifically charged and organized to serve the development and delivery of distance education.**

If distance education is to grow and thrive at Penn State, there is a clear need to create an administrative locus for such activities that is able to coordinate development and marshal the many diverse services needed to support and advance the method. By virtue of his current charge and responsibility over many of the units in the current infrastructure that already support distance education activities, the Vice President for Continuing Education is the logical person to assume responsibility for the creation of such a unit. However, the Task Force does not recommend the creation of a new bureaucratic layer within Continuing Education but, rather, a reconfiguration and reorganization of existing units both within and without Continuing Education to serve as a unit specifically devoted to distance education.

In terms of this proposed unit itself, we believe that it must draw from a wide-variety of resources including marketing, program development, program production, expertise in all pertinent media and delivery systems, management, and assessment to provide a comprehensive service for distance education. Our sense is that such a unit would become the focal point for distance education activities and bring status, visibility, and credibility in the field of distance education to Penn State. This unit should be charged with bringing the University to a position of national and international preeminence in the creation and delivery of educational programs to a diverse audience through the innovative use of various technologies. It should be responsible for reviewing distance education proposals generated by the various schools and colleges, studying their feasibility in the broad context of the University's mission, coordinating the various support and management services needed to develop and distribute programs, and funding or

An Evolving Infrastructure

coordinating the funding of distance education programs. This unit would also form and lead a university-wide "Distance Education Coordinating Council," consisting of all units involved in the production, service, or delivery of distance education programs at Penn State, including those that fall outside of the administrative jurisdiction of the unit.

It is recommended that all Distance Education programs and courses will follow the University's standard curricular and program approval processes. As always, ensuring content quality and evaluating pedagogical objectives rests within the purview of the home academic/sponsoring unit.

Recommendation III: That the University commit all resources necessary to fully develop and maintain an evolving technological infrastructure to allow distance education to become a viable, efficient, and effective component in Penn State's future.

The Task force finds that a necessary prerequisite for success in distance education is the existence of the technological infrastructure to support and deliver programs beyond the traditional boundaries of the University. This includes not only traversing the multi-campus structure of the University, but also expanding to other client locations -- locations such as corporate meeting rooms, community learning centers, and, indeed, personal residences themselves. Without a functioning network that creates a truly interactive and interdependent university "geographically dispersed" but technologically united, all other aspects of distance education will be prohibited from producing the positive and beneficial outcomes that we envision.

The technological infrastructure that will be necessary to do this includes items such as adequate production facilities from which to originate programs, the technology needed to support and adapt instruction to the distance education environment, the information resources to support these programs, and the appropriate telecommunications infrastructure. These elements are necessary to deliver programming and information to clients no matter where they may be.

We recognize that the area of information technology is terribly complex and includes a vast array of interwoven yet frequently competing technological interests. To attempt to selectively choose from the myriad of alternatives available without regard to the total picture is, at best, simplistic and could prove to be counterproductive. However, it is clear to the Task Force that a central strategy

must be developed, a cost-projection generated, and a plan for implementation put into effect. This task force recommends that those units and agencies within the University with the knowledge and expertise to forge such an infrastructure be brought together for the expressed purpose of developing a strategic plan that will create the structure needed to serve an enhanced and expanded use of distance education. This is a matter of crucial importance and should be done immediately.

Any consideration of the infrastructure must take into account the realities of constant change and technological breakthroughs. The rate of technological advancement is so rapid that unless the funding strategy developed is of an evolving and flexible nature, the investments that we make will soon be outdated and overcome by new and developing technologies. To that end, we recommend that the University adopt a strategy of providing adequate life-cycle funding for the infrastructure to assure that service levels in the future will be commensurate with ongoing technological developments and with increased audience demand.

A Special Task Force

*** We recommend that a special task force or committee be appointed by the central administration from those agencies or units within the University who possess knowledge or expertise over any aspect of the technological or practical infrastructure needed to serve an enhanced or expanded use of distance education and charged to deliver a strategic plan for the development of that infrastructure at the earliest possible date.**

Strategic Implementation

*** We recommend that the University take whatever steps are necessary to implement the strategic plan for that infrastructure.**

*** We recommend that the University adopt as part of that implementation a strategy of providing adequate life-cycle funding for the technological infrastructure to assure that service levels are maintained and responsive to ongoing technological developments.**

Life-cycle Funding

Recommendation IV: That a system of investment in the future of distance education be established to provide support for program development and the continued growth of the method through its successful application.

A System Of Investment

The ability to calculate or project funding needs for distance education programs is an extremely difficult thing to do because of the almost limitless variety of applications that can be generated and the equally vast range of costs that can

be associated with the method. Some programs, like those that rely on printed texts and postal mail, can be relatively inexpensive while others, particularly those that utilize full-motion video, interactive multi-media, or broadcast delivery, can be extremely expensive. However, programs that require high initial investment may prove to be extremely cost-effective over the long run while others that require only slight support may actually be more costly when viewed from a per student perspective. Since there is such variance in cost from program-to-program and so little relationship between cost and program quality and effectiveness, it is almost impossible to determine what support will be needed for distance education over any given period of time.

However, it is always important to remember that distance education exists as a rather flexible activity. Programs can be made available in whatever quantities are needed to meet demands and can be offered in a variety of formats to serve differing learner circumstances. Distance education programs also become increasingly cost-efficient as demand increases which is seldom the case with resident instruction. Programs can also migrate to other markets and expand their market potential. In short, distance education is an activity with far greater ability to capitalize on opportunities and return more on its investment than many traditional programs that are tied to the twin realities of space and the limited student/teacher ratios predicated by face-to-face instruction.

The Task Force believes that distance education should develop in a more entrepreneurial environment than traditional methods of instruction. We believe that programs should be developed with a view towards generating revenues or creating cost-saving benefits whenever possible in order to self-fund a proportion of the costs of future development. Such a system, based on investment rather than direct funding, would allow the method to build upon its successes while providing for a level of necessary risk taking in the overall scheme of program development. Such a system would also produce a more realistic approach to the market, greater cost-efficiency in operations, more aggressive marketing, and more thoughtful and considered investment strategies. We believe that a spirit of venture capitalism will not only best support distance education activities but will produce programs of higher quality and greater benefit to both students and the University. We also believe that a broad application of the principle of investment will encourage program development and serve to advance the case for distance education.

A Pool Of Resources

***We recommend that a substantial pool of resources be assigned to the proposed Distance Education Unit to fund program development and that a proportion of revenues generated by distance education programs or cost-saving benefits derived from their use be returned to the pool to support further and enhanced program development.**

In order for distance education to grow and prosper, there is a need for the method to develop across the full range of its potential applications and, simultaneously, keep pace with the expanding opportunities that are being provided by emerging technologies. This will require a carefully controlled development process that capitalizes on strengths while allowing for a significant amount of investment in creative and innovative programs that carry a measure of risk in their development. Fundamental to such a process is the existence of a substantial base of funding to support both the production and delivery of programs and the necessary resources to create new programs that will advance the method to the "cutting-edge" of technological use and application.

Rather than take a "scatter-shot" approach spread throughout the 23 centers and campuses of the University, the Task Force believes that a more reasonable approach would be to centralize funding in the proposed distance education unit to allow for a controlled and strategically focused development of distance education. Our sense is that such an approach to funding would produce the most effective use of resources, the maintenance of system-wide standards of quality and excellence in programming, and still allow for investment in the new which will be needed to build the future of distance education.

But rather than seeing this as a typical funding arrangement that operates solely from an annual budget, we envision a more entrepreneurial system that allows for a significant proportion of revenues generated from the success of the method to be returned to the unit to increase its funding ability and promote further development. It is our belief that such a system will foster quality and growth through success and reward. We also believe that cost-saving benefits gained through the use of distance education should also bring enhancements to the unit. Put simply, the Task Force believes that a funding mechanism based in a system of venture capitalism will provide distance education with an administration that is aggressive, focused, considerate of the need for cost-efficiency, yet forward looking and disposed to building a future for distance education through the accomplishments of the present.

An Investment In Our Academic Units

*** We recommend that a portion of the revenues generated by specific distance education programs or the cost-saving benefits derived from their use be returned to the schools, colleges, departments, or any other academic units that participated in the support or development of those programs**

Although the proposed Distance Education Unit and its proposed pool of resources may provide the means for distance education to grow at Penn State, a true initiative for change must begin in the schools, colleges, departments and faculty who will create the programs for the future. In order for such a movement towards distance education to become a reality, there must be not only direction from the central administration but a sense of shared ownership in the method and a commitment to its success built within all of our academic units and embraced by the entire university community.

The Task Force believes that this will require an investment in distance education that comes from every corner of the University rather than from an isolated financial investment that resides only in the proposed Distance Education Unit. Investments in other equally important resources like time, administrative and faculty effort, strategic focus, and local commitments to program development will be necessary to build a true initiative of University-wide proportions. We believe that a call for such investments must show a clear potential for benefits to be gained and rewards granted to those who make the commitment to distance education. A plan that involves profit sharing in revenues and material returns from the cost-saving benefits derived from the success of the method would, in the view of the Task Force, help to provide the necessary incentive to academic units to encourage their involvement in distance education. Such a system would also bring a competitive dimension to the process which would help to foster creativity and innovation, promote quality, and make distance education a matter of strategic importance rather than a peripheral activity. This arrangement would allow distance education to be seen as an opportunity to bring new resources to academic units through their participation and creation of successful programs instigated and developed as part of their own strategic planning process in service to their own goals and missions.

An Investment In Faculty

• We recommend that a portion of the revenues generated by specific distance education programs be returned to the faculty who participated in the creation, teaching, development, or design of those programs in proportion to the extent of their contribution or participation.

At the root of any successful program in distance education are the faculty who conceive, design, present, and shape the content of those programs. Quality distance education programs are the result of teachers who redirect some of their efforts away from the traditional classroom and embrace new methods and conceptions of educating while holding onto the highest standards of excellence in teaching. Quality and excellence in distance education, as in any form of education, are achieved not through technologies or management systems or electronic networks but by the thought, effort, and planning of those teachers who work to create the best instructional programs possible.

In order for Penn State to gain national and international preeminence in distance education, it must attract the finest and most dedicated teachers to the method and allow them to build and create programs of the highest order. To do this, there must be support for their efforts, encouragement from their academic units, and tangible professional benefits for their participation. The most important investment made in distance education will be in the faculty who will shape the programs of the present and the future. The system of investment must be designed to allow quality teachers to become shareholders in method and the primary recipients of the rewards and benefits that will come with its success. Development funds must be made available to faculty to encourage their participation and profit-sharing should be a provision for all faculty working with the method.

Incentives And Rewards

Recommendation V: That the University establish of a clear system of incentives and rewards to encourage activity, recognize achievement, and foster continuing accomplishment in distance education at Penn State.

A movement towards an enhanced and increased utilization of distance education will require a fundamental change in the culture of Penn State. Colleges, departments, and individual faculty will not embrace distance education unless it is seen as being firmly within the mainstream of their mission and acknowledged in parity with other mainstream activities. A clear charge from the central administration to include distance education within the

central strategies of the University will begin the process of change but it will take more tangible benefits to move this process forward. Changing a culture will require rewards and incentives that enable people to change without penalty and provide them with realistic potential for professional advancement.

Colleges, departments, and faculty need encouragement to participate in distance education and, in times of severe financial and material constraint, those encouragements must be clear, compelling, and dramatic. Modest measures and the promise of only marginal benefits will not overcome the institutional inertia that sets in during hard times when people are far more concerned with protecting what they have then extending their interests to new and unfamiliar activities. If a movement towards distance education is to begin, as the Task Force believes it must, the benefits to departments, schools, and colleges must be made abundantly clear, unambiguous, and cogent as forceful examples of the University's new priorities.

The "Rainbow Dividers"

We recommend that the Promotion and Tenure "Rainbow Dividers" be rewritten to specifically recognize distance education activities as being appropriate and co-equal to other activities in the categories of *Teaching Ability And Effectiveness, Research And Creative Accomplishments*, and *Scholarship And Mastery Of Subject Matter.

In order for faculty to freely participate in distance education activities, those activities must be recognized by administrators and peers as being significant and appropriate within the broad context of professional development and accomplishment. Without specific notation or reference in the published guides for dossier preparation and review, the "Rainbow Dividers," such activities will appear to lie outside of the mainstream and, consequently, be regarded as peripheral or of lesser importance than those that do appear.

The Task Force believes that it will be important both practically and symbolically for distance education activities to be specifically referenced in the "Rainbow Dividers" to clearly establish their appropriate place in the process of review, their worth and merit as valuable pursuits for faculty, and remove any question as to whether or where they should be recognized in the review process. Excellence in the teaching of distance education courses should be specifically noted under Teaching Ability And Effectiveness to establish parity with resident instruction. The creation of distance education video, audio, computer software, and multi-media programs should be included along with other recognized

creative activities like painting, sculpture, films, novels, or poems. Research accomplishments in distance education including product development should be duly noted and scholarly achievements such as course or program development should be noted under Scholarship And Mastery Of Subject Matter.

The Task Force believes that it is in the best interests of distance education, individual faculty, and the University to request that the Faculty Senate consider an expansion of the language of the "Rainbow Dividers" to include specific reference to distance education in all appropriate areas of review.

A Mainstream Responsibility

***We recommend that distance education activities be mainstreamed into the faculty's list of responsibilities so that a faculty member teaching, conducting research, or creatively involved in distance education sees it as part of his or her workload and not as an extra or adjunct responsibility.**

Work in distance education has been treated by most departments and colleges as something done "in addition to" or "on top of" faculty's regularly assigned duties. This, more than any other single factor, has kept distance education activity to a minimum and, by definition, outside of the mainstream. If distance education is to grow to occupy a position of strategic importance, it must be accorded status equal to other activities normally included in the calculation of workload assignments. The members of the Task Force agree that unless distance education becomes a regular and accepted part of the responsibilities of faculty in their normal workloads, it will continue to be a minor and peripheral force in Penn State's efforts to create a stronger and more responsive university.

Revenue Sharing

***We recommend that the funding mechanism proposed earlier be used to provide financial incentives for schools, colleges, departments, and faculty to participate in distance education and return benefits whenever distance education programs produce revenues or cost-savings benefits for the University.**

As noted earlier, the Task Force believes that the mechanism for funding distance education programs must make funds available to colleges, departments, and faculty to encourage program development. Academic units and academics must see distance education not only as a valuable method to increase the effectiveness and efficiency of learning but also as a means to increase their own strategic options in planning for the future.

In addition, colleges, departments, and faculty must see the potential for financial rewards that will come from successes in distance education. The Task Force believes that a program that rewards success through benefit-sharing in the accomplishments of the method provides the greatest incentives while promoting quality. Although the Task Force believes that the purely educational benefits of distance education are compelling, we also recognize that any broad-based movement towards expanded program use and development will depend on the creation of a system that provides clear financial incentives and holds the potential to produce substantial rewards.

Awards

***We recommend that the University create annual awards to recognize achievement in distance education and provide support for continued accomplishment.**

Again, the creation of a new culture in higher education that acknowledges and promotes the worth of distance education will require both practical and symbolic recognition of excellence in the method. Awards for excellence and achievement are traditional means of recognizing accomplishments in most areas of academic endeavor and should be granted in the area of distance education.

The Task Force sees an award system for distance education directed at the two areas of primary accomplishment - teaching and research/creative activities. It will be important to specifically recognize teaching in distance education to not only acknowledge the very different skills and techniques required in the method but, also, to elevate the regard for the method to a level of equivalence with traditional instruction. In like ways, the acknowledgment of accomplishment in research and/or creative activities gives a needed sense of value and importance for such efforts.

As with all systems of reward, there is an obvious incentive value in creating awards and the equally important provision of additional support to promote future accomplishment by building upon present achievement. The Task Force sees clear benefit in a system of reward that gives visibility and symbolic support for distance education while allowing accomplishments to sustain and, hopefully, increase the development of expertise in the method.

A Cultural Change

Recommendation VI: That all necessary steps be taken to create an environment favorable to distance education that will promote its use and development while serving to change the culture of higher education at Penn State.

As noted earlier in this report, one of the greatest obstacles to distance education's growth and success is the current culture in higher education that is generally resistant to change, deeply imbedded in the tradition of resident instruction, and, frequently, oppositional to ideas that appear to be new or revolutionary. The members of the Task Force brought many preconceptions and opinions to the process of preparing this report that have been altered and changed by our investigation. We no longer believe that face-to-face instruction is inherently better or more effective than distance education. We have come to understand that distance education encompasses a wide-variety of means and methods and cannot be thought of as being synonymous with telecommunications or electronic media or any other single medium. Even our conception of "distance" has been modified. Distance education does not have to focus on learners at great distances and may prove to be most beneficial in reaching students who are relatively near-by through local learning centers and, even, individual dormitories. But we also recognize that the process that produced change in our perceptions if too demanding and lengthy to apply to the University at large.

It is our contention that strong support from the central administration must be a prerequisite for any attempt at change but that changes at the most important level, within colleges and departments, will not occur solely because of direction from the administration. We believe that examples of successful distance education programs created within our own educational units will be the most persuasive means of advancing the method and changing our cultural views of successful instruction. Our sense is that locally developed examples of what distance education can do and the benefits that it can provide will be a more compelling and practical means of affecting change than any other avenue that is open to us.

This does not mean that other means should not be employed. The International Distance Education Conference planned for the fall of 1993 and other University-wide events focused on distance education provide valuable exposure and important information about the method. In addition to formal events, a program of information and education for the full University community will be needed to dispel the many misconceptions and false impressions that are associated with the method and present its case with clarity and accuracy. There is also the very real need to bring distance education out of the background of University activities and make it visible and prominent in University thinking.

Yet, it is the firm belief of the Task Force that involvement in the practical development of distance education must begin now and take place across the full-spectrum of academic activity if there is to be a strategically viable movement towards its use.

Demonstration Projects

***We recommend that the initial thrust of the proposed Distance Education Unit be to identify and develop demonstration projects in each of the major academic units to clearly establish the potential use, benefit, and application of distance education within these units in service to their broad academic goals.**

For most of our faculty and many of our colleges and schools, distance education is unknown, misunderstood, or viewed as being inappropriate to serve their interests. In order to change these attitudes, it will be necessary to create specific projects that demonstrate the worth and merit of the method in the particular context of each of these major academic units. These demonstration projects can be the first stages of programs intended for full development or specifically designed as promotional presentations to explore the possible uses of the method in service to the distinct needs of a particular unit. The Task Force believes that such programs should be encouraged, supported, and produced for presentation as rapidly as possible.

Conferences And Workshops

*** We recommend that the University and the American Center For The Study Of Distance Education sponsor and promote conferences, workshops, speakers programs, and other events to inform and educate the university community about distance education.**

The Task Force believes that an aggressive campaign to promote distance education, inform the university community of its nature and use, and bring examples of its successful application to the attention of both faculty and administrators must be undertaken as a precondition to any serious initiative towards an expanded use of distance education.

Informational Programs

*** We recommend that the proposed Distance Education Unit develop individualized programs with each major academic unit to inform and educate their faculty about distance education and bring them to a better understanding of the worth, merit, and potential benefits of the method for their particular area.**

REFERENCES

Amthor, G., "Multimedia in Education: An Introduction," Ultimedia. Milford, Connecticut: International Business Magazines, 1992.

Boyer, E.L., "Scholarship Reconsidered, Priorities of the Professoriate". Princeton: The Carnegie Foundation for the Advancement of Teaching, 1990

Cetron, M., Gayle, M., Educational Renaissance. New York: Sr. Martins Press, 1990.

Chute, A.G., B. Hancock, L.B.Balthazar, "Distance Education Futures: Information Needs and Technology Options". Performance and Instruction, November/December 1991.

Clark, R., "Evaluating Distance Learning Technology". Prepared for the Office of Technology Asessment. U. S. Congress, Washington, D. C., May 1990.

Commonwealth Secretariat, "Towards a Commonwealth of Learning". Report of the Expert Group on Commonwealth Co-operation in Distance Education and Open Learning. Marlborough House, London, 1987.

DeLoughry, T.J., "Crucial Role Seen for Technology in Meeting Higher Education's Challenges". The Chronicle of Higher Education, September 23, 1992.

Economic Development Partnerhip Board Committee on Telecommunications, Telecommunications in the Keystone State: A Report on Pennsylvania's Telecommunications Infrastructure, Harrisburg, PA, 1992.

Elson, J., "The Campus Of The Future," Time. April 13, 1992.

Eurich, N.P., The Learning Industry, Education for Adult Workers. Princeton: Carnegie Foundation for the Advancement of Teaching, 1990.

Gehlauf,D., M. Schatz, T. Frye, "Faculty Perceptions of Interactive Television Instructional Strategies: Implications for Training". The American Journal of Distance Education, The Pennsylvania State University, College of Education, 5(3):20-28, 1991.

Gilder, G., Life After Television. New York: W.W. Norton, 1992.

Gilder, G., An American Vision. Washington, D.C.: Caro Institute, 1989.

Gilley, J.W., Thinking About American Higher Education: the 1990's and Beyond. New York: Macmillan, 1991.

Granger, D., "Open Universities: Closing the Distances to Learning", Change, July/August 1990.

Hall, J.W., Access Through Innovation: New Colleges for New Students. New York: MacMillan, 1991.

Kendall, J.R., M. Oaks, "Evaluation of Perceived Teaching Effectiveness: Course Delivery via Interactive Video Technology versus Traditional Classroom Methods", The Journal of Continuing Higher Education, Fall, 1992.

Lemowie, M., "Tomorrow's Lesson: Learn or Perish," Time: Beyond The Year 2000. Fall, 1992.

Martinez, D., Mead, G., Computer Competence: A First National Analysis. New York: St. Martins Press, 1991.

McKinney, L., Solutions For The 90's. Milford, Connecticut: International Business Magazines, 1992.

Miller, G., A Working Paper: "Long-Term Trends in Distance Education" University of Maryland University College, 1992.

Moore, M.,"Self-Directed Learning and Distance Education". The American Journal of Distance Education. I (1): 1986.

Naisbitt, J., Aburdene, P., Megatrends 2000. New York: Avon Books, 1990.

National University Continuing Education Association, Lifelong Learning Trends. Washington, D. C., 1992.

Olcott, D., "Bridging the Gap: Distance Learning and Academic Policy," Continuing Higher Education Review, 55 (1 & 2): Winter/Spring, 1991.

Perry, W., G. Rumble, A Short Guide to Distance Education. Cambridge, England: International Extension College Publication, 1987

Price Waterhouse n/e/t/a), Electronic Highways: Providing the Telecommunications Infrastructure for Pennsylvania's Economic Future" Executive Summary. Prepared for the Pennsylvania Chamber of Business and Industry, 1991.

Robichaux, M., "Giving College Degrees for Watching TV" The Wall Street Journal: B-1, June 1, 1992.

Schwartz, J., "The Next Revolution," Newsweek. April 6, 1992.

Sims, R.R., S.J. Sims, Managing Institutions of Higher Education into the 21st Century: Issues and Implications. Westport, CO: Greenwood Press, 1991.

Stone, H.R., "Economic Develoment and Technology Transfer: Implications for Video-based Distance Education," in Moore, M., ed. w/ P. Cookson, J.Donaldson, A. Quigley, Contemporary Issues in American Distance Education, New YorK: Pergamon Press. 1991.

The Pennsylvania State University, Guiding Principles of the University Future Committee. University Park, PA, 1991.

The Pennsylvania State University, Report of the Strategic Study Group on Extended Degrees. University Park, PA, 1991.

The Pennsylvania State University, Statement of the Council of Academic Deans on the Future of Penn State. University Park, PA, 1992.

The Pennsylvania State University, Strategic Plan Update, Computer and Information Systems. University Park, PA, 1992.

The Pennsylvania State University, Strategic Plan Update, Division of Continuing Education. University Park, PA, 1992.

The Pennsylvania State University, University Faculty Senate Guide to Curricular Procedures. University Park, PA, 1989.

Thomas, J., President Thomas's Address to Penn State Faculty and Staff, Intercom. University Park, PA., April 1991.

U. S. Congress, Office of Technology Assessment. "Linking for Learning: A New Course for Education." OTA-Set-43D. Washington, D. C.: U. S. Government Printing Office, November, 1989.

U. S. Department of Education, "America 2000, An Education Strategy", Washington, D.C., 1991.

U. S. Government , Report to Congressional Comittees. The Changing Workforce. B-247218, Washington, D. C.: U.S. General Accounting Office, March 1992.

Verduin, J. R., T. Clark, Distance Education: The Foundations of Effective Practice, San Francisco: Jossey-Bass, 1991.

Watkins, B., S. Wright, "Looking to the Future", The Foundations of American Distance Education, Dubuque, Iowa: Kendall-Hunt: 1991.

Whittington, N., Is Instructional Television Educationally Effective? A research review. The American Journal of Distance Education. I (1): 47-57, 1987.

Zoglin, R., "Beyond Your Wildest Dreams," Time: Beyond The Year 2000. Fall, 1992.

TASK FORCE ON DISTANCE EDUCATION
MEMBERSHIP

John Bagby
Associate Professor
Smeal College of Business Administration
509N Business Administration Building
University Park, PA 16802
(814) 863-0520
Fax: 814-863-7067

B. Alton Brantley
Associate Professor
Milton S. Hershey Medical Center
500 University Drive
Box 850
Hershey, PA 17033
(717) 531-6291
Fax: 717-531-6162

R. Thomas Berner
Prof. of Journalism & American Studies
215 Carnegie Building
University Park, PA 16802
(814) 863-7993
Fax: 814-863-6134

John V. Cooney
Campus Executive Officer
Allentown Campus
6090 Mohr Lane
Fogelsville, PA 18051-9733
(215) 285-4811
Fax: 215-285-5220

Margaret Cote
Associate Dean
College of The Liberal Arts
112 Sparks Building
University Park, PA 16802
(814) 865-9557
Fax: 814-865-3641

Joseph S. DiGregorio
Associate Dean
College of Engineering
101 Hammond Building
University Park, PA 16802
(814) 865-7644
Fax: 814-863-4749

Diane Enerson
Dir. of Instructional Dev. Program
401 Grange Building
University Park, PA 16802
(814) 863-2599
Fax: 814-863-8411

John English
Research Specialist
Continuing Education
203 Keller Building
University Park, PA 16802
(814) 863-8353
Fax: 814-865-3003

Mark Erstling
Director
Educational Communications & General Manager
WPSX-TV
202 Wagner Building
University Park, PA 16802
(814) 863-4010
Fax: 814-865-3145

Shirley Hendrick
Assistant Dean
Smeal College of Business Administration
409 Business Administration Building
University Park, PA 16802
(814) 863-2479
Fax: 814-865-6284

Lamartine F. Hood
Dean
College of Agriculture
201 Agriculture Administration Building
University Park, PA 16802
(814) 865-2541
Fax: 814-865-3103

William Kelly, CHAIR
Acting Department Head
Integrative Arts
College of Arts and Architecture
215 Wagner Building
University Park, PA 16802
(814) 865-1750
Fax: 814-865-7140

Charles A. Langston
Professor in Geo Physics
College of Earth and Mineral Sciences
440 Deike Building
University Park, PA 16802
(814) 865-0083
Fax: 814-863-7823

Robert W. Light
Associate Dean for Graduate Studies
Research, Continuing Education and
Economic Development
Penn State Erie
Station Road
Erie, PA 16563-0101
(814) 898-6270
Fax: 814-898-6461

Fred Loomis
Acting Dir. of Administrative Services
Continuing Education
212 Keller Building
University Park, PA 16802
(814) 863-0203
Fax: 814-865-3003

William Loop
113 Sparks Building
University Park, PA 16802
(814) 865-9557
Fax: 814-865-3641

David Mercer
Director
Independent Learning
114 Mitchell Building
University Park, PA 16802
(814) 863-3248
Fax: 814-863-1385

Salvatore Meringolo
Assistant Dean & Head
Collection Services
University Libraries
E505 Pattee Library
University Park, PA 16802
(814) 865-0401
Fax: 814-865-3665

Edward Minnock
Director of Continuing Education
Penn State Harrisburg
777 West Harrisburg Pike
Middletown, PA 17057
(717) 948-6500
Fax: 717-948-6276

Michael Moore
Associate Professor
College of Education
206 Charlotte Building
University Park, PA 16802
(814) 863-3764
Fax: 814-865-5878

Tannaz Rahman
Associate Director
International Cooperative Programs
222 Boucke Building
University Park, PA 16802
(814) 865-7681
Fax: 814-865-3336

Richard Stern
Professor
227 Applied Scien Building
University Park, PA 16802
(814) 865-6344
Fax: 814-865-3105

Anne Stevens
Research Coordinator
Continuing Education
509 Keller Building
University Park, PA 16802
(814)865-2143
Fax: 814-865-3003

Richard St. Pierre
Professor and Head, Health Education
College of Health and Human
Development
1 White Building
University Park, PA 16802
(814) 863-0435
Fax: 814-865-3282

Steve H. Updegrove
Director of Telecommunications
Telecommunications Building
University Park, PA 16802
(814) 863-1201
Fax: 814-863-1205

Charmayne Wagner
Staff Assistant
Continuing Education
212 Keller Building
University Park, PA 16802
(814) 865-7581
Fax: 814-865-3003